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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/707,816	11/07/2000	Noriaki Sugawara	NEC N00204	6776

7590 03/13/2003

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EXAMINER
SHENG, TOM V

ART UNIT	PAPER NUMBER
2673	

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/707,816	Applicant(s) SUGAWARA ET AL.	
	Examiner Tom V Sheng	Art Unit 2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-5,7-9,11-13,15 and 16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-5,7-9,11-13,15 and 16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *31 December 2002* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Claims 2, 6, 10, 14, and 17-32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 4.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3-5, 7-9, 11-13, 15 and 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Art in view of Kaburagi et al. (US Patent 6160532).

As to claims 1 and 3, Admitted Art teaches a step of applying gamma compensation (see figure 19) making suitable to a red transmittance characteristic (by a gamma compensating circuit 4_1), a green transmittance characteristics (by a gamma compensating circuit 4_2), and a blue transmittance characteristics (by a gamma compensating circuit 4_3) for an applied voltage of said color liquid crystal display (S_{RC}, S_{GC}, or S_{BC}) to a red video signal, a green video signal and a blue video signal, in order to obtain a compensated red video signal, a compensated green video signal, and a compensated blue video signal (S_{RG}, S_{GG}, and S_{BG}, respectively); and

a step of driving said color liquid crystal display based on said compensated red video signal, said compensated green video signal, said compensated blue video signal (gamma compensated video signals are then polarity inverted [by polarity inverting circuits 5_1, 5_2, and 5_3] and amplified [by video amplifiers 6_1, 6_2, and 6_3] before applied to data electrode driving circuit 8 for driving the color liquid crystal display 1).

Admitted Art does not teach independent gamma compensation by supplying respectively independently generated reference voltages to each of a plurality of gamma compensating circuits. However, Kaburagi teaches independently setting data (see figure 5, secondary gamma correction circuit 32, and slope data a and offset data b) used for gamma compensations from a minimum to a maximum transmittance of each color transmittance characteristic (different characteristics of individual liquid display panels [of red, green, and blue] necessitate the differences and changes of gamma correction data; see column 12 line 26, to column 13 line 55). Kaburagi's gamma compensation is done digitally, and with regard to Admitted Art's analog gamma compensation, this means the provision of reference voltages, respectively to each gamma compensating circuits. It is well known in electronics that circuitry can be implemented functionally in digital or analog format.

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to incorporate respective reference voltage sets into Admitted Art, thus optimizing the contrast of a color liquid crystal display.

As to claims 4, 8, 12, and 16, Kaburagi's CPU 304 (see figure 6) calculates a different set of slope data a and offset data b based on applied/input voltage range and

the T-V characteristics of each display panel (column 13 lines 38-55), and thus reads on claimed "said voltages or said data are independently changeable".

As to claims 5 and 7, Admitted Art teaches a gamma compensation by correcting the peculiar gamma of either CCD or CRT to that of a LCD (see page 3 line 29 to page 4 line 8) using one set of reference voltages, but it is silent regarding applying **both** a first gamma compensation regarding luminance characteristic of a reproduced image, and a second gamma compensation regarding a red, green, or blue transmittance characteristic. However, Kaburagi teaches both the first and second gamma compensations (see figure 1, primary correction circuit 24, and secondary correction circuit 32; column 10 line 15, to column 11 line 6).

Moreover, Admitted Art does not teach independent gamma compensation by supplying respectively independently generated reference voltages to each of a plurality of gamma compensating circuits. However, Kaburagi teaches independently setting data (see figure 5, secondary gamma correction circuit 32, and slope data a and offset data b) used for gamma compensations from a minimum to a maximum transmittance of each color transmittance characteristic (different characteristics of individual liquid display panels [of red, green, and blue] necessitate the differences and changes of gamma correction data; see column 12 line 26, to column 13 line 55). Kaburagi's gamma compensation is done digitally, and with regard to Admitted Art's analog gamma compensation, this means the provision of reference voltages, respectively to each gamma compensating circuits. It is well known in electronics that circuitry can be implemented functionally in digital or analog format.

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide for both gamma compensations in Admitted Art, and independent gamma compensation based on individual color's transmittance characteristics, thus providing for both necessary luminance correction for LC display and T-V correction of respective color display, because this would maximize the luminance and contrast of the color LC display.

Claims 9 and 11 are rejected per analysis of claim 1. Moreover, it is inherent that modified Admitted Art would independently generate reference voltages to the three (color) gamma compensating circuits and drive the display with respective compensated video signals.

As to claims 13 and 15, Admitted Art is silent regarding using a first, second, and third gamma compensating circuits, with each performing **both** the first and second gamma compensations. Admitted Art is also silent regarding supplying **respectively** reference voltages to the first, second, and third gamma compensating circuits. However, as analyzed in claims 5 and 9 above, Admitted Art in view of Kaburagi, would provide first and second gamma compensations in one circuit (4_1, 4_2, or 4_3) and further provides respective reference voltages (i.e. three different sets of reference voltages).

Response to Arguments

4. Applicant's arguments with respect to claims 1, 3-5, 7-9, 11-13, and 15-16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom V Sheng whose telephone number is (703) 305-6708. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

TS
March 8, 2003

Amare Mengistu
Primary Examiner